Reversible motor driver

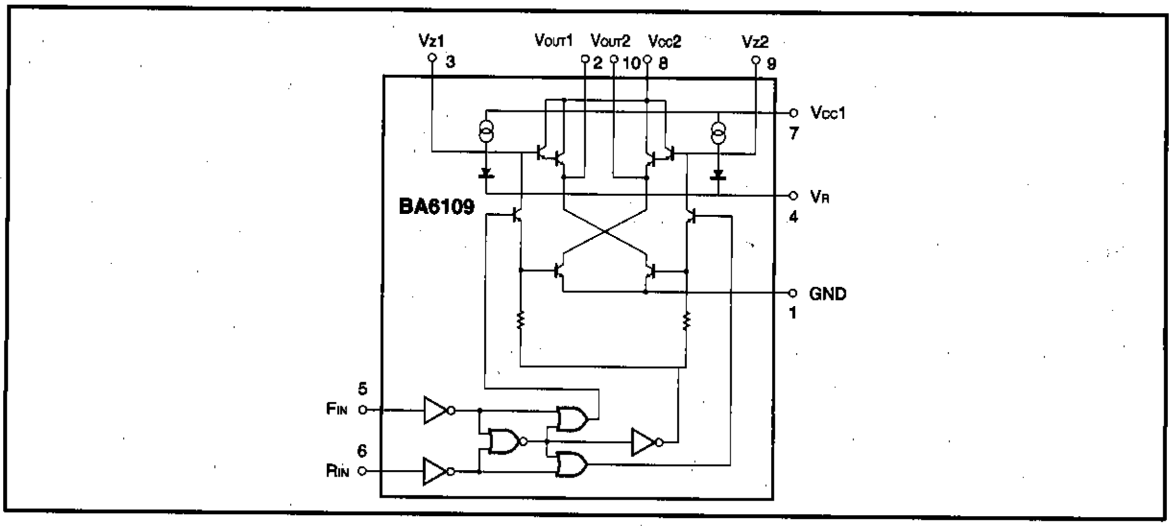
BA6109

The BA6109 is a monolithic IC used for driving reversible motors. Two control logic inputs allow three output modes : forward, reverse, and stop.
When switching from the forward or reverse mode to the stop mode, a brake is applied by absorbing the counter-electromotive force of the motor. The IC has a built-in function to absorb motor rush currents that occur when switching the output mode.
Output voltage is determined by the external constant voltage diode connected between pin 4 and GND. The motor drive transistor can tolerate a rush current of up to 800mA. The IC can drive motors with various operating voltages. Because the IC operates with a current less than 50 μA, you can directly connect the IC with CMOSs or other control logic outputs.

●Features

1) Motor driving power transistors are built in; a rush current up to 800mA is allowable.
2) Brake is applied when stopping the motor.
3) Built-in function to absorb motor rush currents.
4) Interfaces with MOS LSI devices.
5) Small number of external parts.
6) Wide range of operating supply voltage (6 ~ 18V).
7) Available in a 10-pin SIP package.

●Block diagram



● Measurement circuit

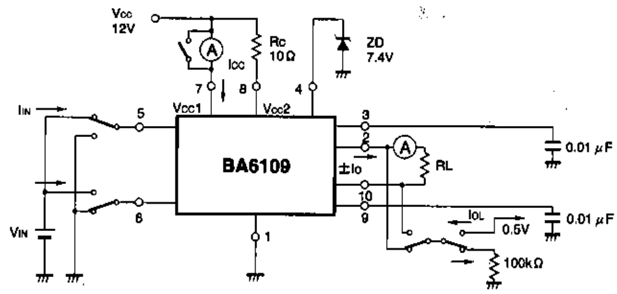


Fig.1

● Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{CC}	18	V
Power dissipation	Pd	2200*1	mW
Operating temperature	Topr	−25~75	℃
Storage temperature	Tstg	−55~125	℃
Output current	I_{OUT}	800*2	mA
Input voltage	V_{IN}	−0.3~V_{CC}	V

*1 Refer to the power damping characteristics for details.
*2 500 µs pulse with a duty ratio of 1%.

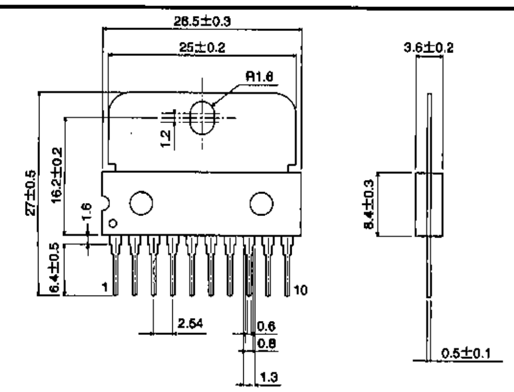
FIN	RIN	V_{out1}	V_{out2}
1	1	L	L
0	1	L	H
1	0	H	L
0	0	L	L

Input level 1 is 2.0 V or more
Input level 2 is 0.7 V or less

● Electrical characteristics (unless otherwise noted, Ta=25℃ and V_{CC1}=12V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	Measurement Circuit
Operating supply voltage 1	V_{CC1}	6.0	−	18.0	V	−	Fig.1
Operating supply voltage 2	V_{CC2}	−	−	18.0	V	−	Fig.1
Quiescent current	I_Q	−	15.0	30.0	mA	5, 6pin : GND, $R_L=\infty$	Fig.1
Minimum input ON current	I_{IN}	−	10.0	50.0	µA	$R_L=\infty$	Fig.1
Input threshold voltage	V_{INT}	0.7	−	2.0	V	$R_L=\infty$	Fig.1
Output leakage current	I_{OL}	−	−	1.0	mA	5, 6pin : GND, $R_L=\infty$	Fig.1
Output voltage	V_O	5.2	5.8	6.9	V	R_L=60Ω, ZD=7.4V	Fig.1

● External dimensions (Units: mm)



HSIP10